- The distances from the detected positions of the optical images to a set of positions on the object are measured, thereby obtaining three-dimensional information about the object. (20

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IN - TANMACHI MASAHIRO; others02

PA - CANON INC

TI - DISTANCE MEASURING APPARATUS

AB - PURPOSE:To obtain an apparatus available constantly for high-accuracy measurements and 3-dimensional informations, etc. of an object in comparatively short time, by installing a mask forming a pattern light flux and an elliptical reflecting mirror etc., oriented to the mask to the mask of a beam of light from a light source.

- CONSTITUTION:A light flux that passed light-transmitting unit 61, 65 from a light source 3 develops light images in positions P1, P2 on an object 5 after passing through a lens 1. Next, after passing through a lens 3 respectively, it develops light images in positions D1, D2 in an image sensor 4. An output wave form of this sensor 4 is observed by an image-processing apparatus for obtaining distance up to an image position on the surface of the object 5. And, on this apparatus, the light source 3 is set part from the mask 6 and outside a light path of a light flux reflected by an elliptic reflecting mirror 7 oriented to the mask 6 of a beam of light from the light source 3. Thus, only such a light flux which came from the specified direction is admitted into a light-transmitting unit 61, 62,...65. Further, the light-source 3 is set in the first focus of the reflecting mirror 7 and the center of incident pupil of the lens 1 in rough vicinity of the second focus of the mirror 7 and thus, all light fluxes obtainable by the mask 6 is irradiated on the object 5.

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